

3.3 Circular Functions

Name _____ Date _____ Period _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Find the measures of two angles, one positive and one negative, that are coterminal with the given angle.

1) 30°

1) _____

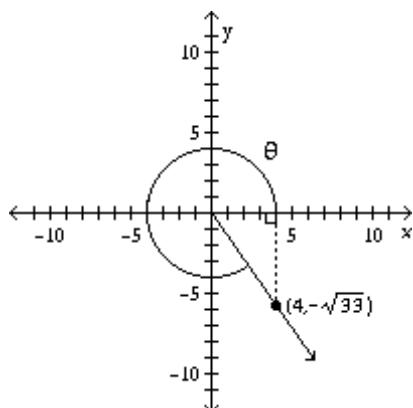
2) $\frac{\pi}{3}$

2) _____

Evaluate the six trigonometric functions of the angle θ .

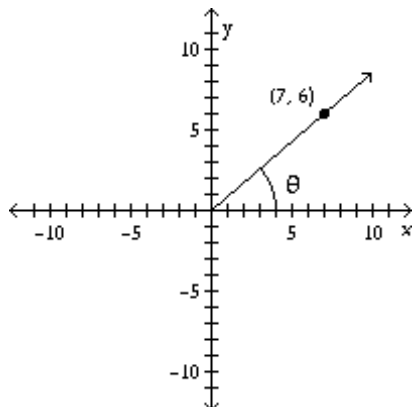
3)

3) _____



4)

4) _____



Point P is on the terminal side of angle θ . Evaluate the six trigonometric function for θ . If the function is undefined, write "undefined".

5) P(3, 4)

5) _____

6) P(0, 5)

6) _____

7) P(5, -2)

7) _____

Determine whether the given function is positive or negative for values of t in the specified quadrant.

8) Quadrant II,

8) _____

a) $\cos t$:

b) $\sin t$:

c) $\tan t$:

9) Quadrant III,

9) _____

a) $\cos t$:

b) $\sin t$:

c) $\tan t$:

Determine the sign (positive or negative) of the given value without use of a calculator.

10) $\sin 171^\circ$

10) _____

11) $\cos \frac{7\pi}{8}$

11) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Choose the point on the terminal side of θ .

12) $\theta = 45^\circ$

A) (2, 2)

B) $(\sqrt{3}, 1)$

C) $(-\sqrt{3}, 1)$

D) $(1, \sqrt{3})$

12) _____

13) $\theta = \frac{7\pi}{6}$

A) $(1, \sqrt{3})$

B) $(-1, 1)$

C) (2, 2)

D) $(-\sqrt{3}, -1)$

13) _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Evaluate without using a calculator by using ratios in a reference triangle.

14) $\cos 120^\circ$

14) _____

15) $\sec \frac{\pi}{3}$

15) _____

16) $\sin \frac{13\pi}{6}$

16) _____

17) $\tan \left(-\frac{15\pi}{4}\right)$

17) _____

18) $\cos \frac{23\pi}{6}$

18) _____

19) $\sin \frac{11\pi}{3}$

19) _____

Find a) $\sin \theta$, b) $\cos \theta$, and c) $\tan \theta$ for the given quadrantal angle. If the value is undefined write "undefined".

20) -450°

20) _____

21) 7π

21) _____

22) $-\frac{7\pi}{2}$

22) _____

Evaluate without using a calculator.

23) $\sin \theta$, and $\tan \theta$ if $\cos \theta = \frac{2}{3}$ and $\cot \theta > 0$.

23) _____

24) $\tan \theta$ and $\sec \theta$, if $\sin \theta = -\frac{2}{5}$ and $\cos \theta > 0$.

24) _____

25) $\sec \theta$ and $\csc \theta$, if $\cot \theta = -\frac{4}{3}$ and $\cos \theta < 0$.

25) _____

Evaluate by using the period of the function.

26) $\cos\left(\frac{5,555,555\pi}{2}\right)$

26) _____

27) $\sin\left(\frac{\pi}{6} + 49,000\pi\right)$

27) _____